WHAT IS CLAIMED IS:

1. A method of killing a cell comprising:
   a) contacting said cell with a first composition comprising an agent that increases intracellular O_2^-; and
   b) contacting said cell with a second composition comprising 2-methoxyestradiol.

2. The method of claim 1, wherein said cell is a cancer cell.

3. The method of claim 2, wherein said cancer cell is derived from a solid tumor.

4. The method of claim 2, wherein said cancer cell is a leukemia cell.

5. The method of claim 1, wherein said cell is a human cell.

6. The method of claim 1, wherein said compound that increases intracellular O_2^- is rotenone.

7. The method of claim 1, wherein said compound that increases intracellular O_2^- comprises bleomycin.

8. The method of claim 1, wherein said compound that increases intracellular O_2^- comprises daunorubicin.

9. The method of claim 1, wherein said compound that increases intracellular O_2^- comprises epirubcin.

10. The method of claim 1, wherein said agent that increases intracellular O_2^- comprises TNF-alpha.

11. The method of claim 1, wherein said agent that increases intracellular O_2^- comprises heat.

12. The method of claim 1, wherein said agent that that increases intracellular O_2^- comprises an arsenate.

13. The method of claim 1, wherein said agent that that increases intracellular O_2^- comprises a retinoic acid derivative.

14. The method of claim 1, wherein the administration of said first composition and said second composition is substantially concurrent.

15. The method of claim 1, wherein the administration of said first composition is subsequent to the administration of said second composition.

16. The method of claim 1, wherein the administration of said first composition is prior to the administration of said second composition.

17. The method of claim 1, wherein said first and said second compositions are combined in a single formulation.

18. A method of treating cancer comprising administering to a host a composition comprising 2-methoxyestradiol and an agent that increases intracellular O_2^-.

19. The method of claim 18, wherein said agent that increases intracellular O_2^- is rotenone.

20. The method of claim 18, wherein said agent that increases intracellular O_2^- comprises bleomycin.

21. The method of claim 18, wherein said agent that increases intracellular O_2^- comprises daunorubicin.

22. The method of claim 18, wherein said agent that increases intracellular O_2^- comprises epirubcin.

23. The method of claim 18, wherein said agent that increases intracellular O_2^- comprises TNF-alpha.

24. The method of claim 18, wherein said agent that increases intracellular O_2^- comprises heat (hyperthermia).

25. The method of claim 18, wherein said agent that that increases intracellular O_2^- comprises an arsenate.

26. The method of claim 18, wherein said agent that that increases intracellular O_2^- comprises a retinoic acid derivative.

27. The method of claim 18, wherein said host is a human.

28. The method of claim 18, wherein the administration of said first composition and said second composition is substantially concurrent.

29. The method of claim 18, wherein the administration of said first composition is subsequent to the administration of said second composition.

30. The method of claim 18, wherein the administration of said first composition is prior to the administration of said second composition.

31. The method of claim 18, wherein said first and said second compositions are contained within a pharmaceutically acceptable composition.

32. The method of claim 31, wherein said pharmaceutically acceptable composition includes a pharmaceutically acceptable carrier.

33. The method of claim 31, wherein said pharmaceutical composition is formulated for oral administration.

34. The method of claim 31, wherein said pharmaceutical composition is formulated for parenteral administration.

35. The method of claim 31, wherein said pharmaceutical composition is formulated for administration by injection.

36. The method of claim 18, wherein said host has cancer.

37. The method of claim 36, wherein said cancer is a solid tumor.

38. The method of claim 36, wherein said cancer is a leukemia.

39. The method of claim 18, wherein said first and said second compositions are combined in a single formulation.

40. A composition comprising 2-methoxyestradiol and a second compound that increase intracellular O_2^-.

41. The composition of claim 40, wherein said compound that increases intracellular O_2^- comprises rotenone.

42. The composition of claim 40, wherein said compound that increases intracellular O_2^- comprises bleomycin.

43. The composition of claim 40, wherein said compound that increases intracellular O_2^- comprises daunorubicin.

44. The composition of claim 40, wherein said compound that increases intracellular O_2^- comprises epirubicin.

45. The composition of claim 40, wherein said agent that that increases intracellular O_2^- comprises an arsenate.

46. The composition of claim 40, wherein said agent that that increases intracellular O_2^- comprises a retinoic acid derivative.

47. The composition of claim 40, wherein said composition is a pharmaceutically acceptable composition.

48. The composition of claim 40, wherein said compound that increases intracellular O_2^- comprises tumor necrosis factor-alpha.

49. The composition of claim 48, wherein said pharmaceutically acceptable composition includes a pharmaceutically acceptable carrier.

50. The composition of claim 48, wherein said pharmaceutical composition is formulated for oral administration.

51. The composition of claim 48, wherein said pharmaceutical composition is formulated for parenteral administration.

52. The composition of claim 48, wherein said pharmaceutical composition is formulated for administration by injection.